



## Subject card

Subject name and code	EXPERT SYSTEMS IN BUSINESS, PG_00058521						
Field of study	Economic Analytics						
Date of commencement of studies	October 2022	Academic year of realisation of subject			2024/2025		
Education level	first-cycle studies	Subject group			Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	3	Language of instruction			Polish		
Semester of study	6	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			exam		
Conducting unit	Department of Informatics in Management -> Faculty of Management and Economics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Anna Trzaskowska				
	Teachers		dr inż. Anna Trzaskowska				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	30.0	0.0	0.0	45
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	45		5.0		25.0	75
Subject objectives	Uses expert systems supporting decision-making processes, designing solutions using inference mechanisms and knowledge bases						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W02] demonstrates comprehensive preparation in the field of methods, techniques for formulating and solving problems		identifies quantitative methods and information technologies appropriate to support the analysis of economic phenomena		[SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects		
	[K6_U07] uses information technologies to improve data analysis and decision-making processes		uses IT tools adequate to solve contemporary economic problems, including supporting decision-making processes		[SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task		
Subject contents	<p>Introducing to expert systems - definition of basic concepts: data, information, knowledge, knowledge formalization; expert systems - classification, applications, construction and examples.</p> <p>Creation of expert systems - reasons, stages of design, types, advantages and disadvantages, acquiring knowledge; structure of the expert system - overview of components (knowledge base, inference machine, explanatory module, user interface).</p> <p>Knowledge representation - knowledge acquisition process, knowledge base, representation methods, knowledge representation languages.</p> <p>Complex methods of knowledge representation - semantic networks, predicates and resolution method, frames, neural networks, fuzzy sets and fuzzy logic, genetic algorithms, evolutionary programming, scenarios, the Delphi method.</p> <p>Information technologies supporting the construction of expert systems programming languages in logic - Prolog.</p> <p>Designing a simple rule-based expert system - market analysis, concept, knowledge base, project schedule, business case.</p>						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	laboratory		60.0%		80.0%		
	exam in the form of a test		60.0%		20.0%		

Recommended reading	Basic literature	Michalik, K. (2014). Systemy ekspertowe we wspomaganiu procesów zarządzania wiedza w organizacji. Katowice: Wydawnictwo Uniwersytetu Ekonomicznego w Katowicach. Niederliński, A. (2006). Regułowo-modelowe systemy ekspertowe. Gliwice: Wydawnictwo Pracowni Komputerowej Jacka Skalmierskiego. Wakulicz-Deja, A., Nowak-Brzezińska, A., Przybyła-Kasperek, M., Simiński, R. (2018). Systemy ekspertowe. Warszawa: Akademicka Oficyna Wydawnicza EXIT,
	Supplementary literature	none
	eResources addresses	
Example issues/ example questions/ tasks being completed	Types of expert systems Selected ways of knowledge representation Stages of creating an expert system	
Work placement	Not applicable	